NWS Form E-5 U.S. DEPARTMENT OF COMMERCE NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION NATIONAL WEATHER SERVICE **MONTHLY REPORT OF HYDROLOGIC CONDITIONS**	**HYDROLOGIC SERVICE AREA:** Pocatello, Idaho **REPORT FOR:** **MONTH:** April **YEAR:** 2016
TO: Hydrologic Operations Division, W/OH2 National Weather Service National Oceanic and Atmospheric Administration Silver Spring, Maryland 20910	**SIGNATURE** Corey Loveland Service Hydrologist **DATE:** May 15, 2016
When no flooding occurs, include miscellaneous river conditions, such as significant rises, record low stages, ice conditions, snow cover, droughts and hydrologic products issued (NWS Instruction 10-924).	

X **An X in this box indicates that *no* flooding has occurred for the month within this hydrologic service area.**

Overview:

April's precipitation was near normal across the Hydrologic Service Area (HSA) with decent amounts in the central mountains, Bannock and Oneida counties. Overall, mostly below normal precipitation fell across the most of the Snake River Plain; and near normal amounts in the mountains. Generally, one-half to four inches of precipitation fell across our area during the past month with most of the precipitation falling in the mountainous regions of the Idaho-Wyoming border and the Goose/Trapper/Raft River basins. Temperature departures from normal for February show that across the HSA, we ranged mostly 3 to 6 degrees F above normal across the HSA. Mean average temperatures ranged from 34 to 53 degrees F across the HSA. Most basins, besides the Henrys Fork) are in the near normal range for water year to date precipitation thus far.

As far as the short-term 8 to 14 day Climate Prediction Center Outlook is concerned, the forecast is for mostly 40 percent chance of below normal temperatures across eastern Idaho with a 33 to 40 percent chance of above normal precipitation. The one-month forecast graphics are found below. For the three-month outlook, the temperatures are forecast to be warmer than normal in eastern Idaho; mostly ranging from 33 to 50 percent chance of above normal temperatures within the HSA. As for precipitation, the outlook is for mostly above normal precipitation across eastern Idaho with a 33 to 40 percent chance of above normal precipitation.

Of the data available for the month, the stations within the HSA reaching the highest 24-hour temperature was the Minidoka Dam station reaching 86°F on the 22nd. The station (non-SNOTEL and non-RAWS) with the lowest recorded temperature was the Island Park COOP station at 9°F on April 1st. The highest recorded 24-hr precipitation (non-SNOTEL) occurred at the Driggs COOP station where 1.47 inches fell on the 14th. The highest recorded precipitation total (non-SNOTEL) occurred at the American Falls CoCoRaHS station where 2.47 total inches was recorded for the month. The Howell Canyon SNOTEL recorded 5.50 inches of total precipitation for the month according to NRCS. The basins receiving the greatest precipitation were the Raft River goose/Trapper basins receiving 141% and 128% of average precipitation respectively for April-based on SNOTEL data.

Reservoirs last month increased capacity overall by around 6% in the upper Snake River basin system (an increase of about 235 KAF occurred over the month and is currently sitting at 83% of capacity overall). Compared to last year at this time, it was about 83% of capacity. According to the Natural Resources Conservation Service and U.S. Bureau of Reclamation reservoir data, the most notable increase in storage

capacity was the Magic and Ririe Reservoirs increasing percent capacity by 36% and 35% respectively. Most reservoirs are above average for capacity with the exception of Oakley reservoir, which is currently at 79% of average. Overall, the upper Snake reservoirs are collectively at 112% of average, the Wood/Lost is 122% and the Southside reservoirs are at 113%.

Current streamflow conditions in eastern Idaho are mostly near to below normal for monthly streamflows for the majority of the unregulated streams (see graphic below).

Drought conditions across eastern Idaho have progressively improved since the last few months. Currently, only about 8 percent of the state is in Abnormally Dry drought status with no areas in Moderate Drought. The latest U.S. Seasonal Drought Outlook shows a clear forecast of no drought conditions within the HSA.

According to the Idaho NRCS Snow Survey May 1st Idaho Surface Water Supply Index (SWSI); combining streamflow volume forecasts and reservoir storage (where appropriate), rates the greatest valued basin for water supply within the HSA as being the Oakley basin. This basin was given a SWSI rating of 0.8 (near to above normal). This rating reflects overall water availability in the basins and are mostly used for irrigational planning purposes. The three lowest ranked basins within the HSA are the Henrys Fork, Teton and Bear River basins, rated at -1.3, -1.0 and -0.8 respectively, which are still rated at near normal. Most basins within the HSA are near to above average for the NRCS May through Sept streamflow volume forecasts: Wood/Lost ranges from 70-87%, upper Snake 73-84%, Southside 114-127% and Bear about 82% of average for points within our HSA.

For more information on the Idaho Surface Water Supply Index (SWSI) May 1st Outlook please visit:
http://www.wcc.nrcs.usda.gov/ftpref/states/id/webftp/swsi/tables/May/SWSI05.pdf

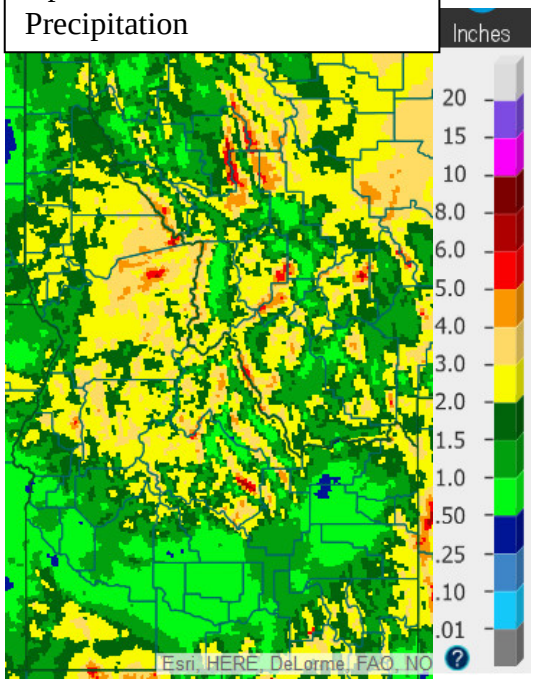
For more information on the Idaho Water Supply May 1st Outlook please go to:
http://www.wcc.nrcs.usda.gov/ftpref/states/id/webftp/wsor/2016/borid516.pdf

For a table format of the current volume forecasts and current runoff for WFO PIH:
www.nwrfc.noaa.gov/water_supply/ws_report.cgi

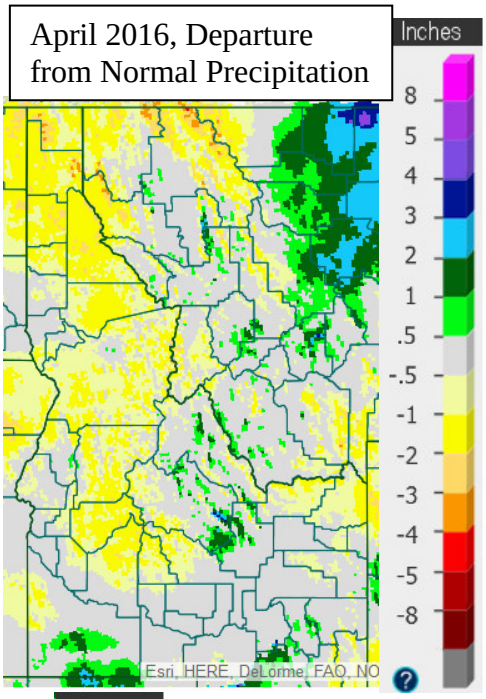
Please see the NWRFC (approximately daily computed ensembles), CBRFC, and NRCS Official May 1st streamflow volume forecasts and Bear Basin conditions below.

Precipitation:

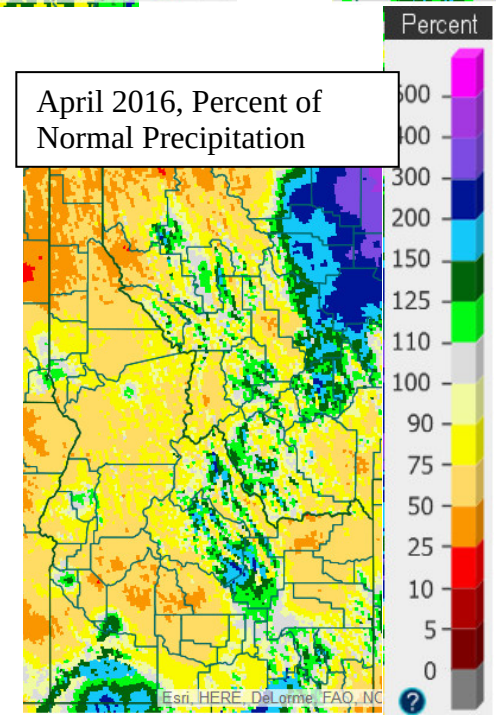
April 2016, Observed Precipitation



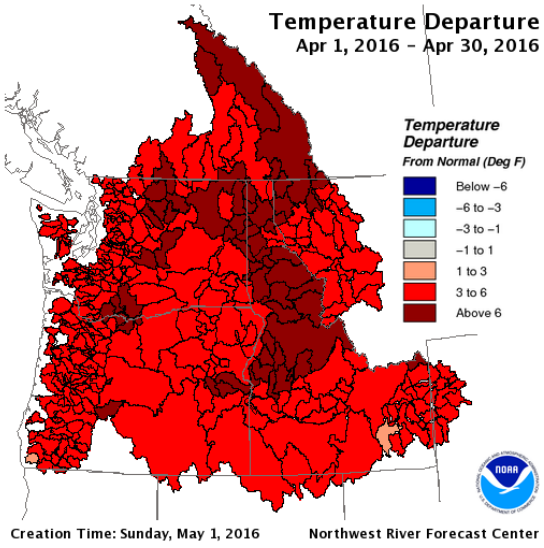
April 2016, Departure from Normal Precipitation



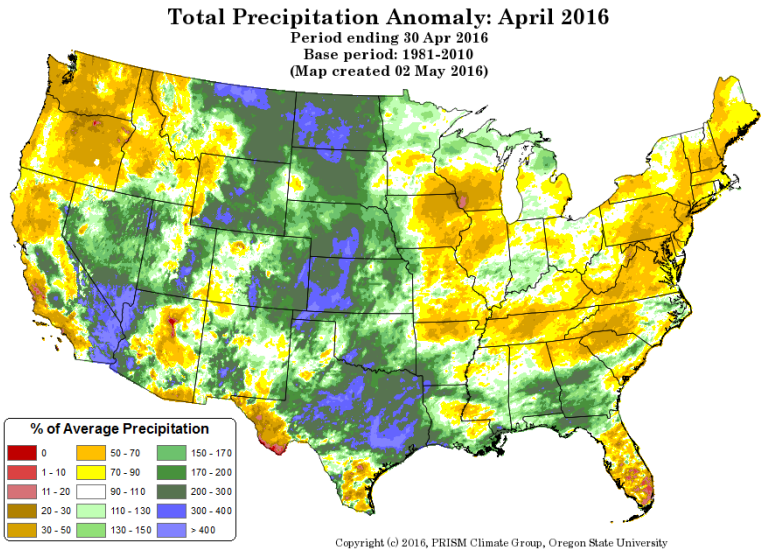
April 2016, Percent of Normal Precipitation



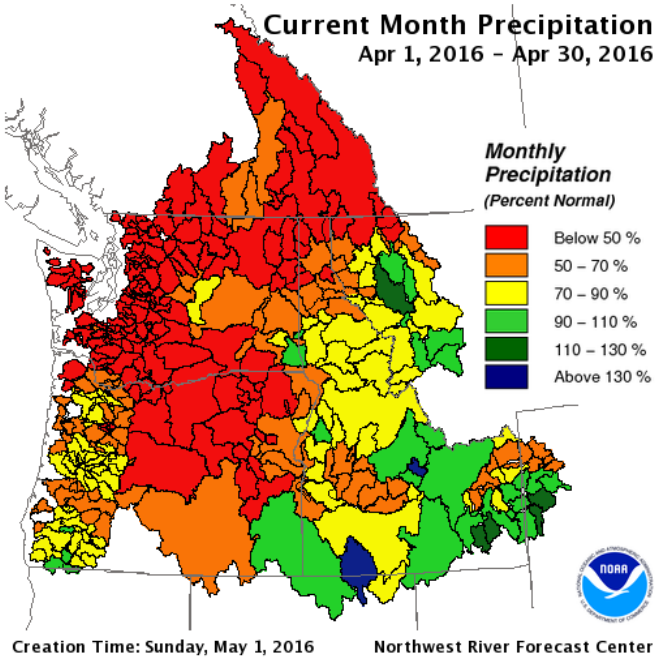
water.weather.gov/precip/#



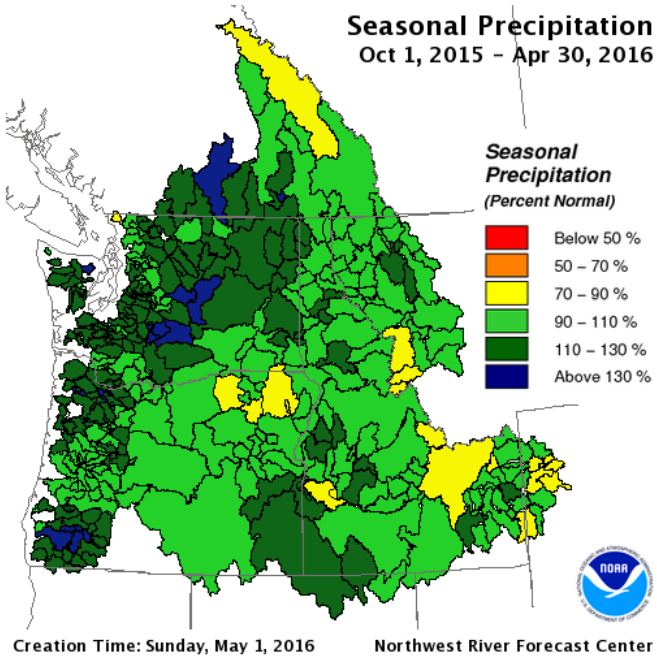
nwrfc.noaa.gov/WAT_RES_wy_summary/20160501/CurMonMAT_2016Apr30_2016050116.png



prism.oregonstate.edu/

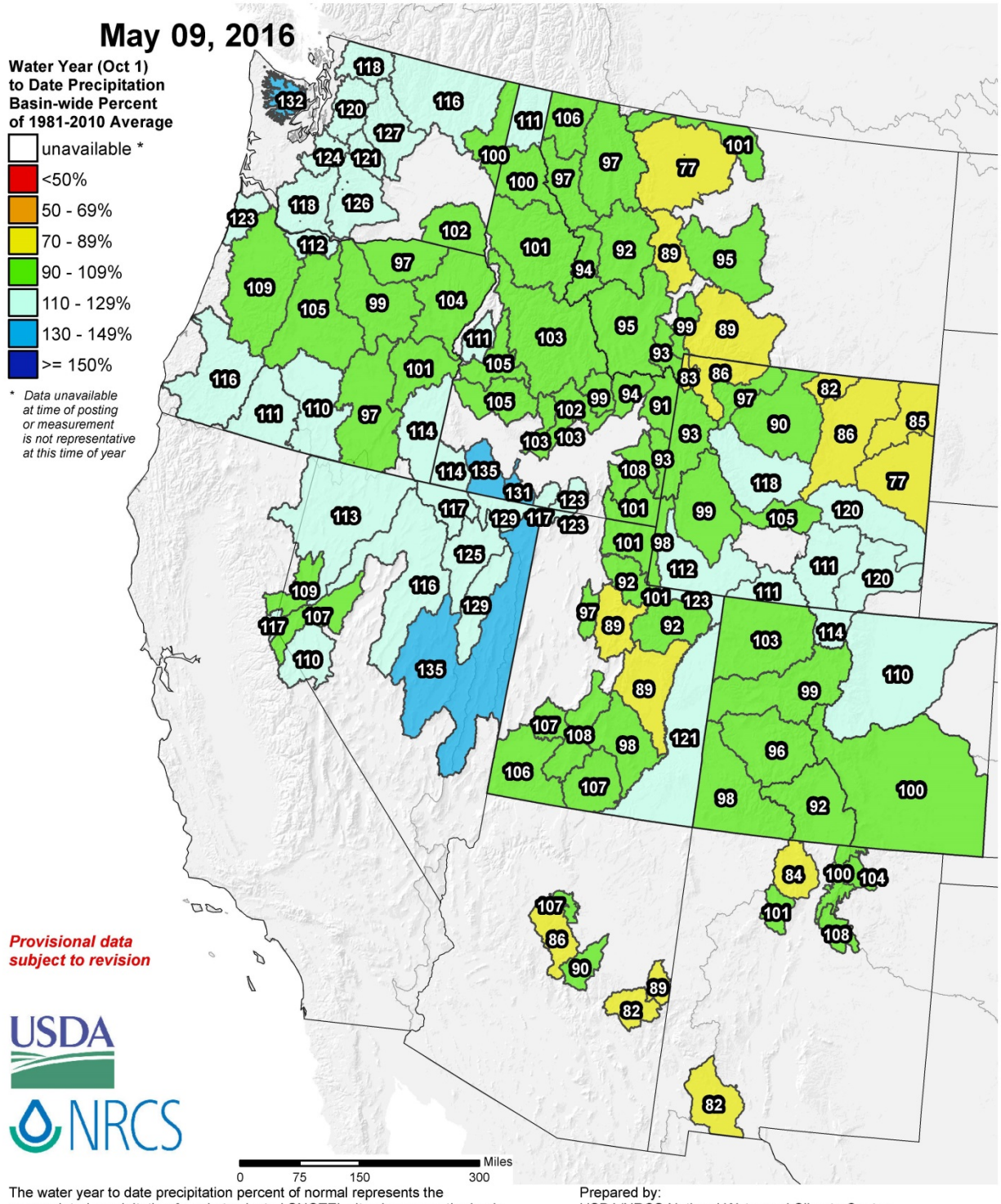


nwrfc.noaa.gov/WAT_RES_wy_summary/20160501/CurMonMAP_2016Apr30_2016050116.png



nwrfc.noaa.gov/WAT_RES_wy_summary/20160501/SeasonalMAP_2016Apr30_2016050116.png

Westwide SNOTEL Water Year (Oct 1) to Date Precipitation % of Normal

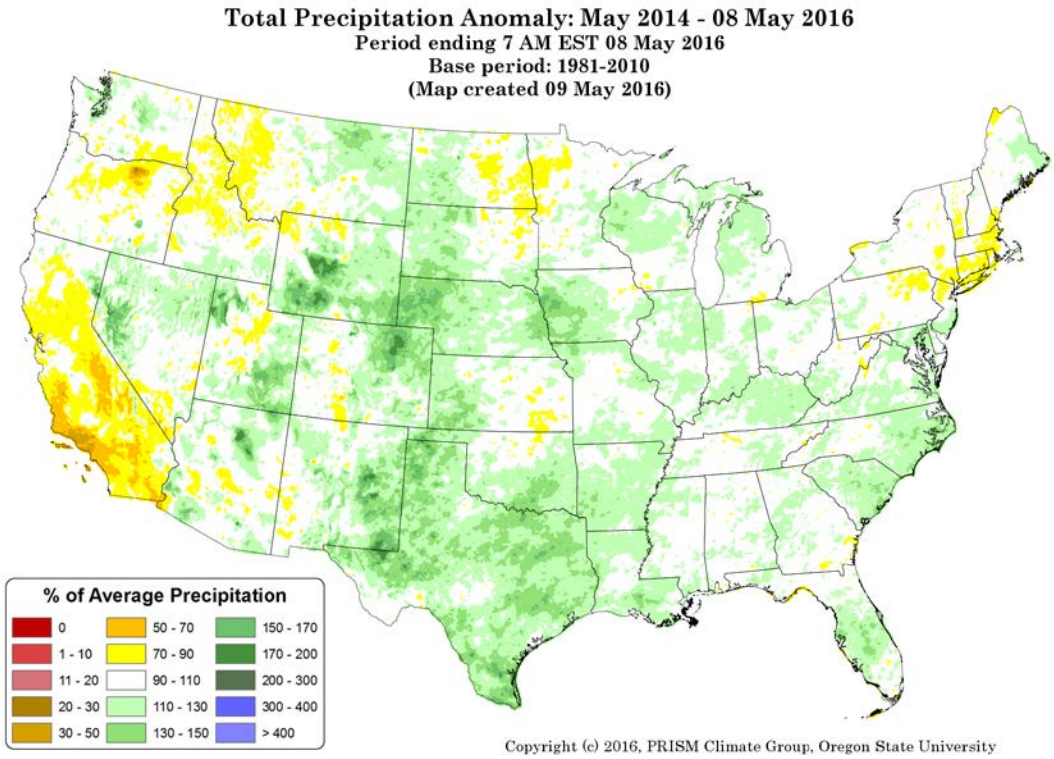


The water year to date precipitation percent of normal represents the accumulated precipitation found at selected SNOTEL sites in or near the basin compared to the average value for those sites on this day. Data based on the first reading of the day (typically 00:00).

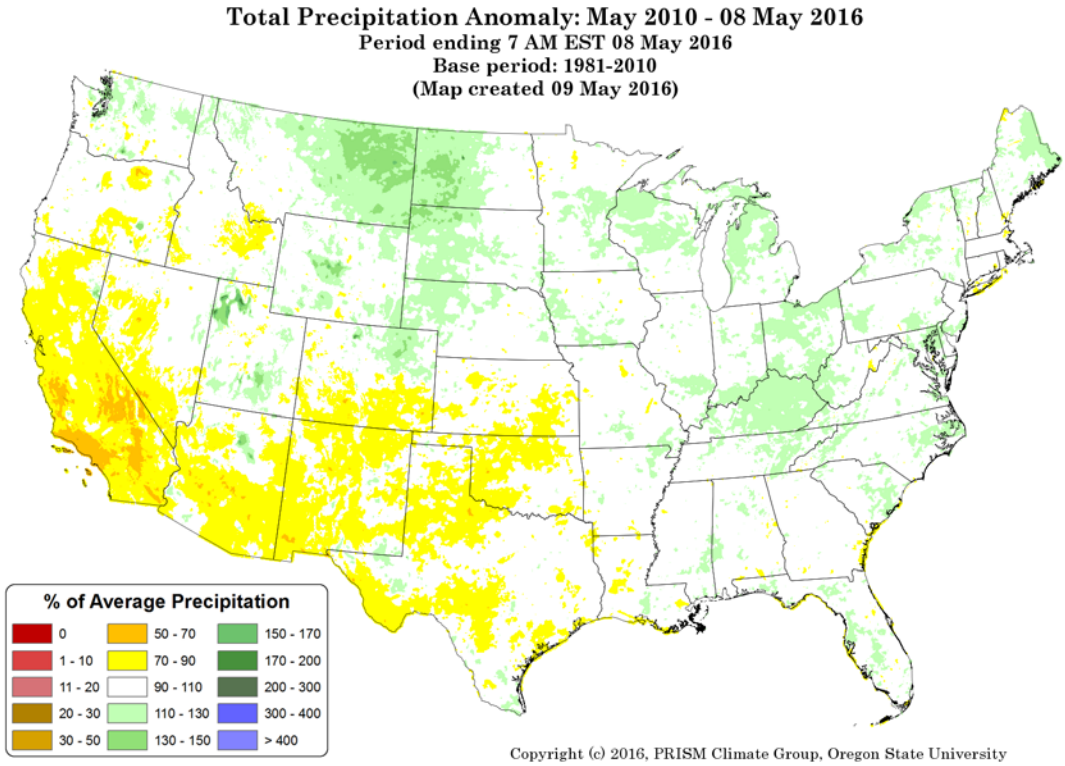
Prepared by:
USDA/NRCS National Water and Climate Center
Portland, Oregon
http://www.wcc.nrcs.usda.gov

wcc.nrcs.usda.gov/ftpref/data/water/wcs/gis/maps/west_wytdprecpctnormal_update.pdf

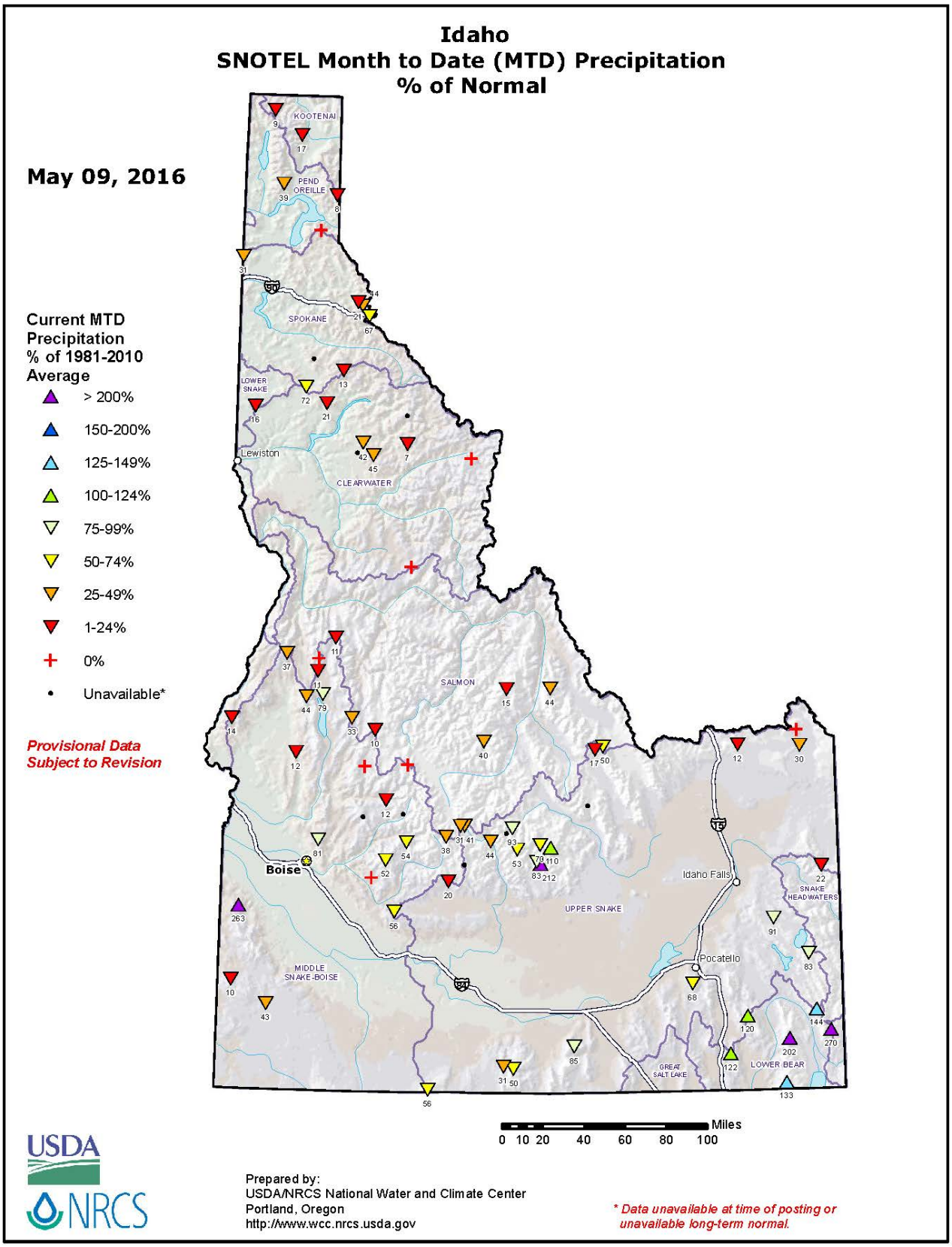
Past 2 Years of Precipitation % of Average:



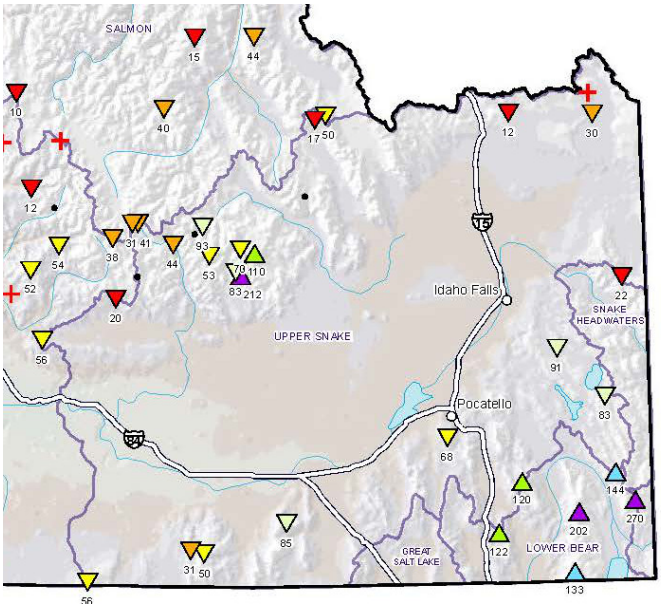
Past 6 Years of Precipitation % of Average:



prism.oregonstate.edu/comparisons/drought.php



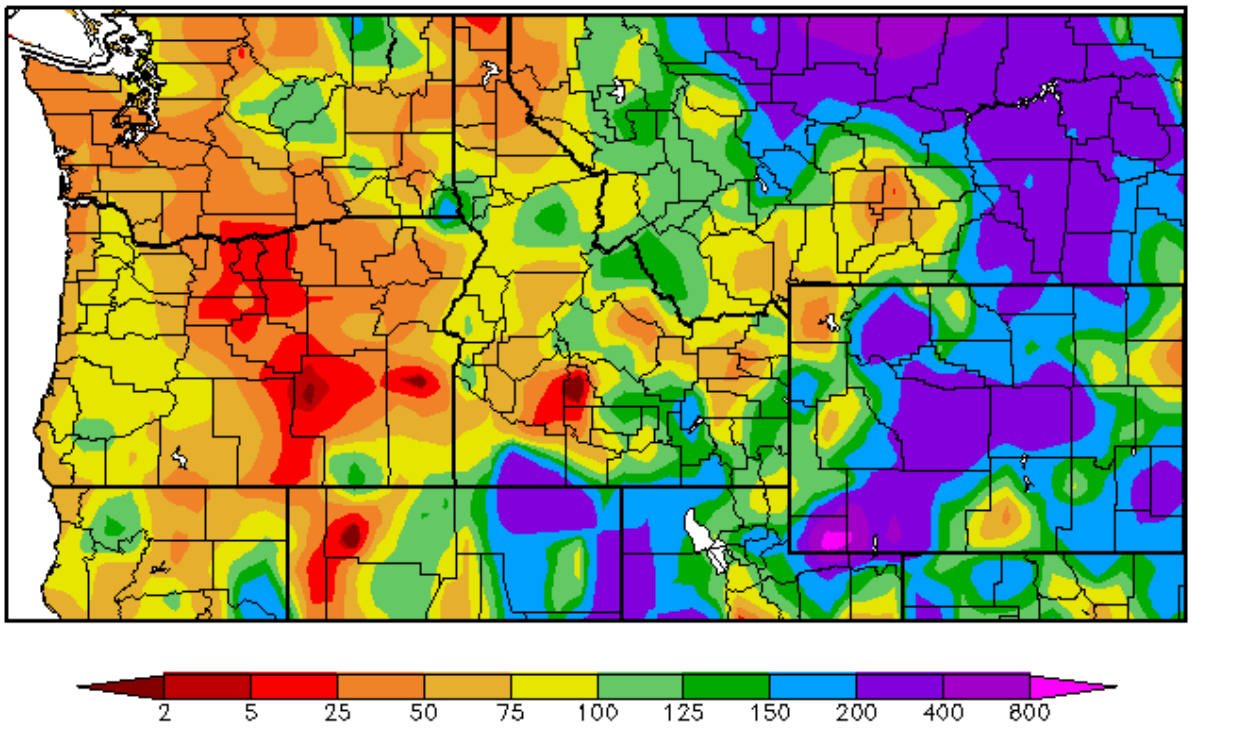
wcc.nrcs.usda.gov/ftpref/data/water/wcs/gis/maps/id_mtdprecpctnormal.pdf



SNOTEL MTD % of Normal Precipitation for end of April 2016
(image is cropped from above image)

April brought some decent precipitation amounts in south central Idaho and parts of the Caribou Highlands. The upper Snake plain and the central mountains were dry though. Western Bingham county received over 150% of normal. Overall, OR, WA and most of ID were dry last month. MT, WY, northern UT and northern NV all did very well with large areas in the 200 to 400% of normal category.

Percent of Normal Precipitation (%)
4/1/2016 – 4/30/2016

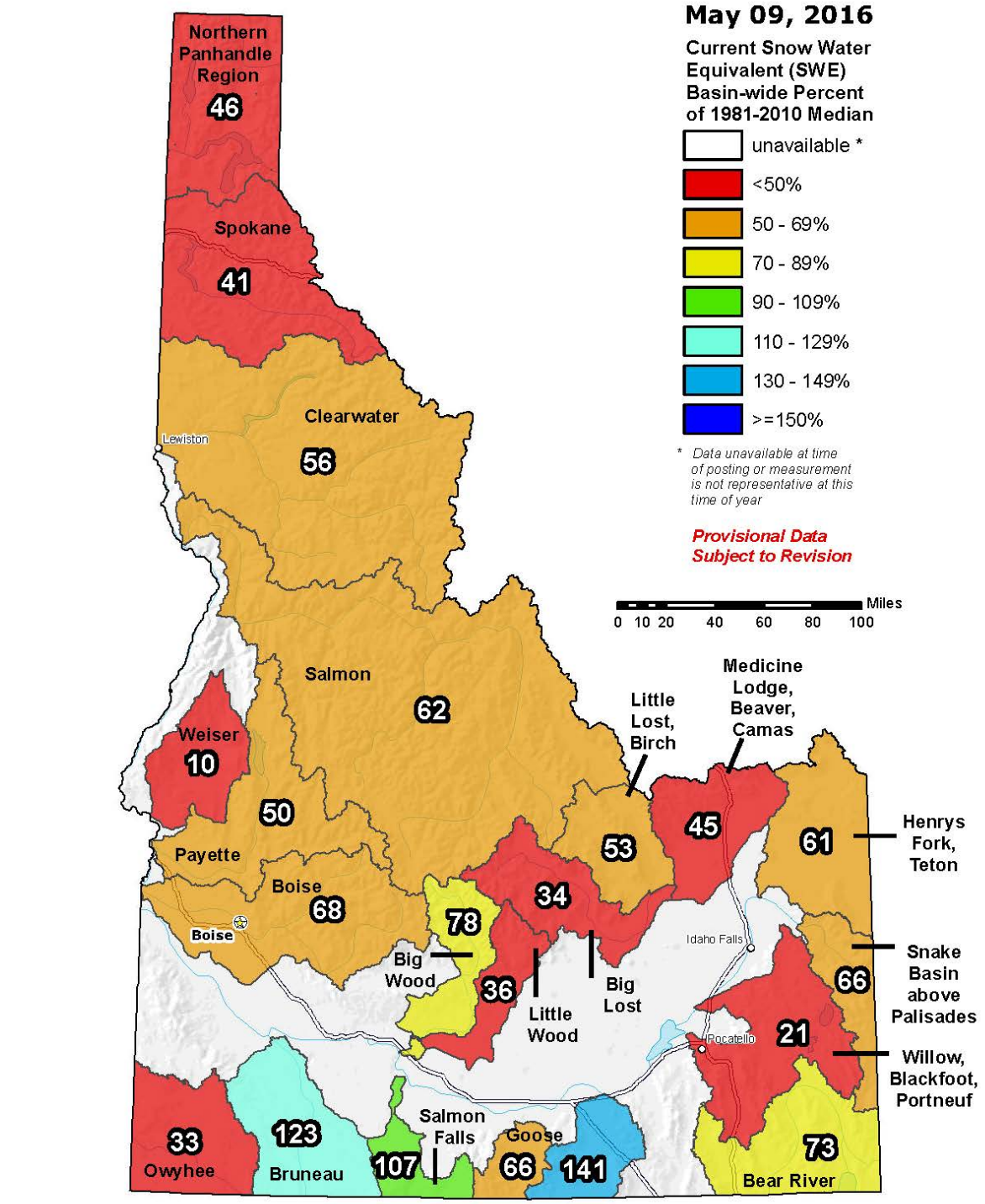


Generated 5/5/2016 at HPRCC using provisional data.

Regional Climate Centers

hprcc.unl.edu/maps.php?map=ACISClimateMaps

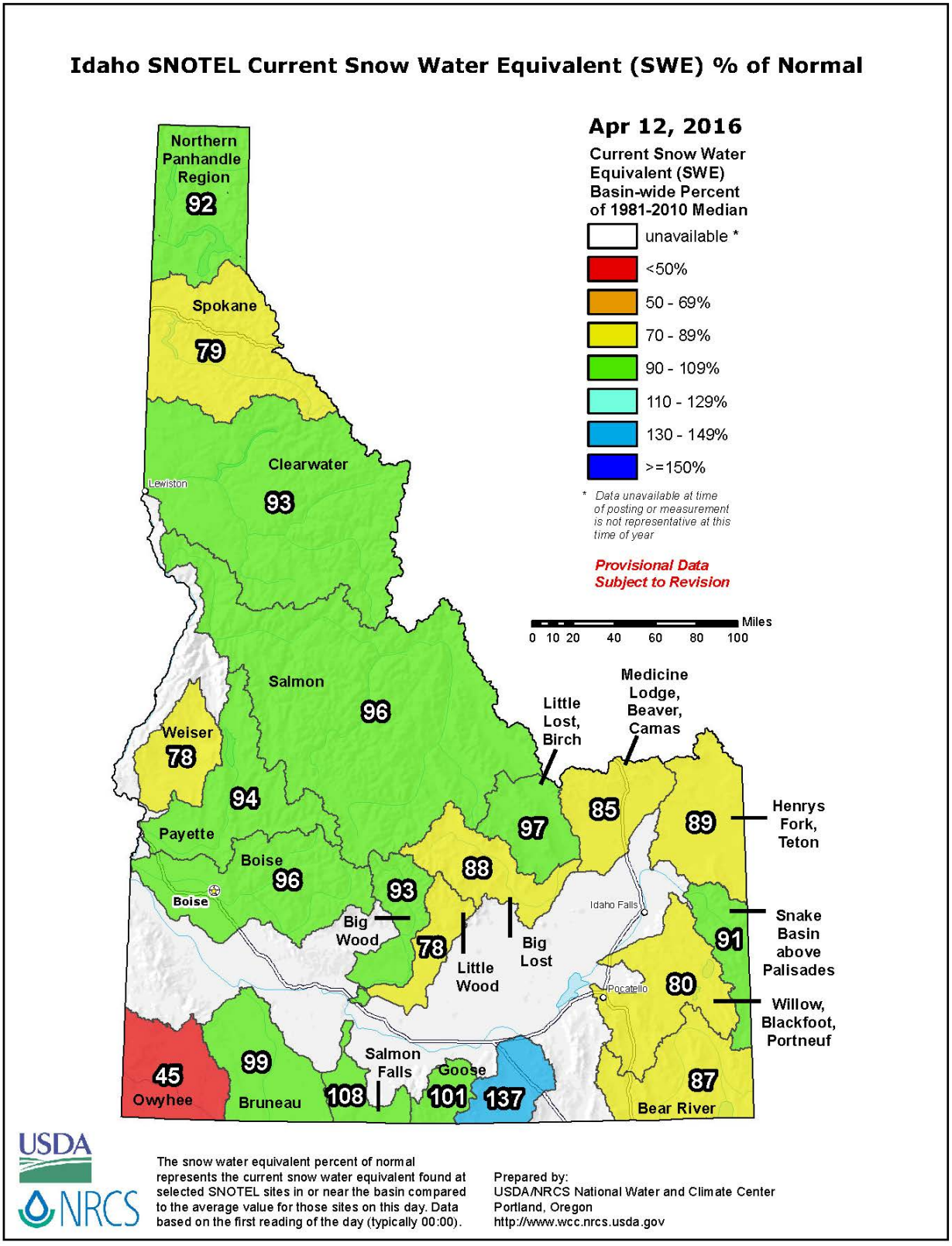
Idaho SNOTEL Current Snow Water Equivalent (SWE) % of Normal



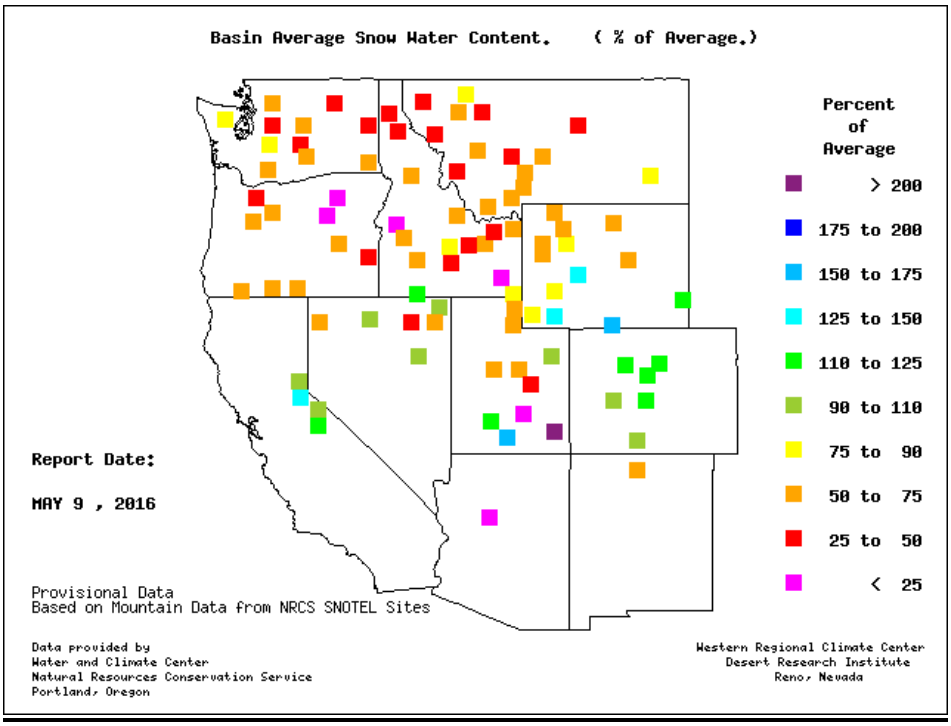
The snow water equivalent percent of normal represents the current snow water equivalent found at selected SNOTEL sites in or near the basin compared to the average value for those sites on this day. Data based on the first reading of the day (typically 00:00).

Prepared by:
USDA/NRCS National Water and Climate Center
Portland, Oregon
http://www.wcc.nrcs.usda.gov

Basinwide SWE compared to last month: A relatively dry April. Mostly basin swe losses with the exception of the Raft River basin, which actually increased in swe by 4% of normal compared to last month (see below):

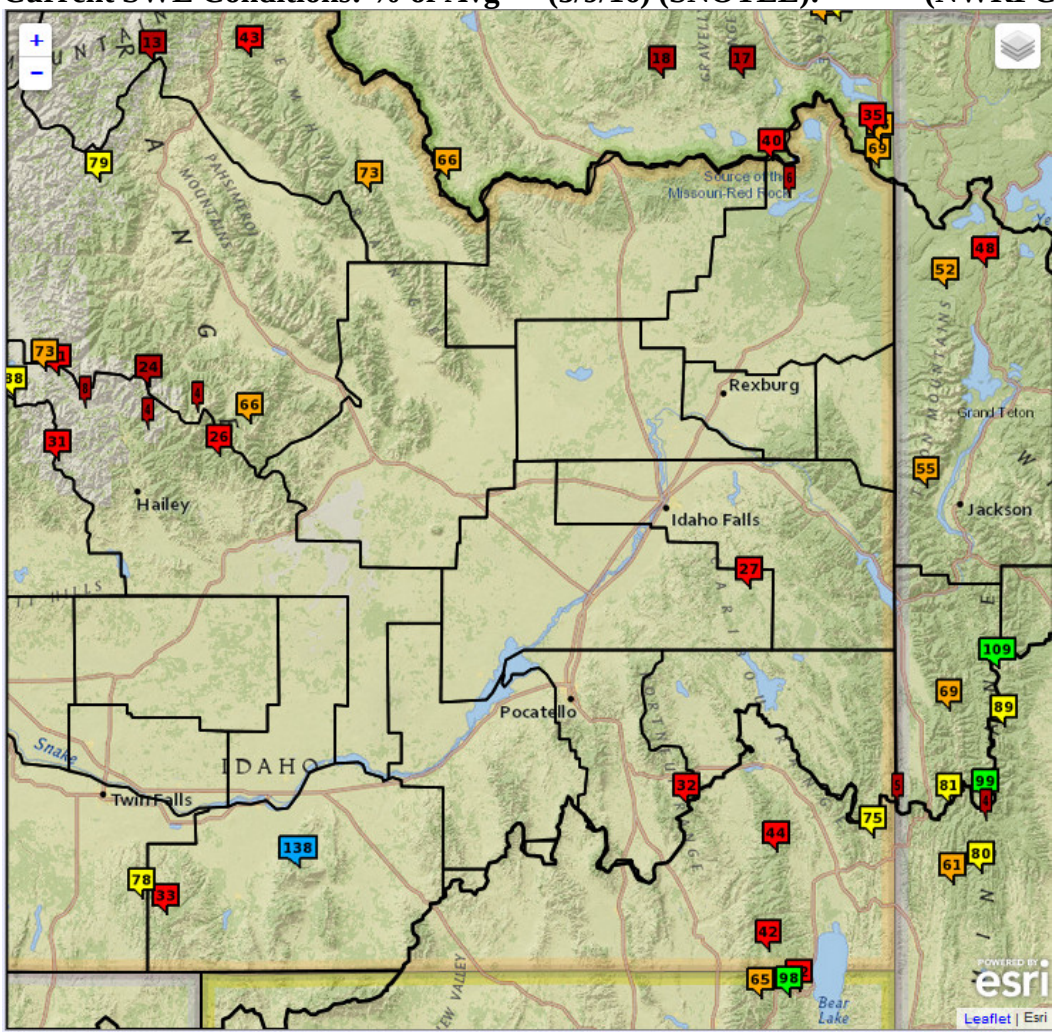


wcc.nrcs.usda.gov/ftpref/data/water/wcs/gis/maps/id_swepctnormal_update.pdf

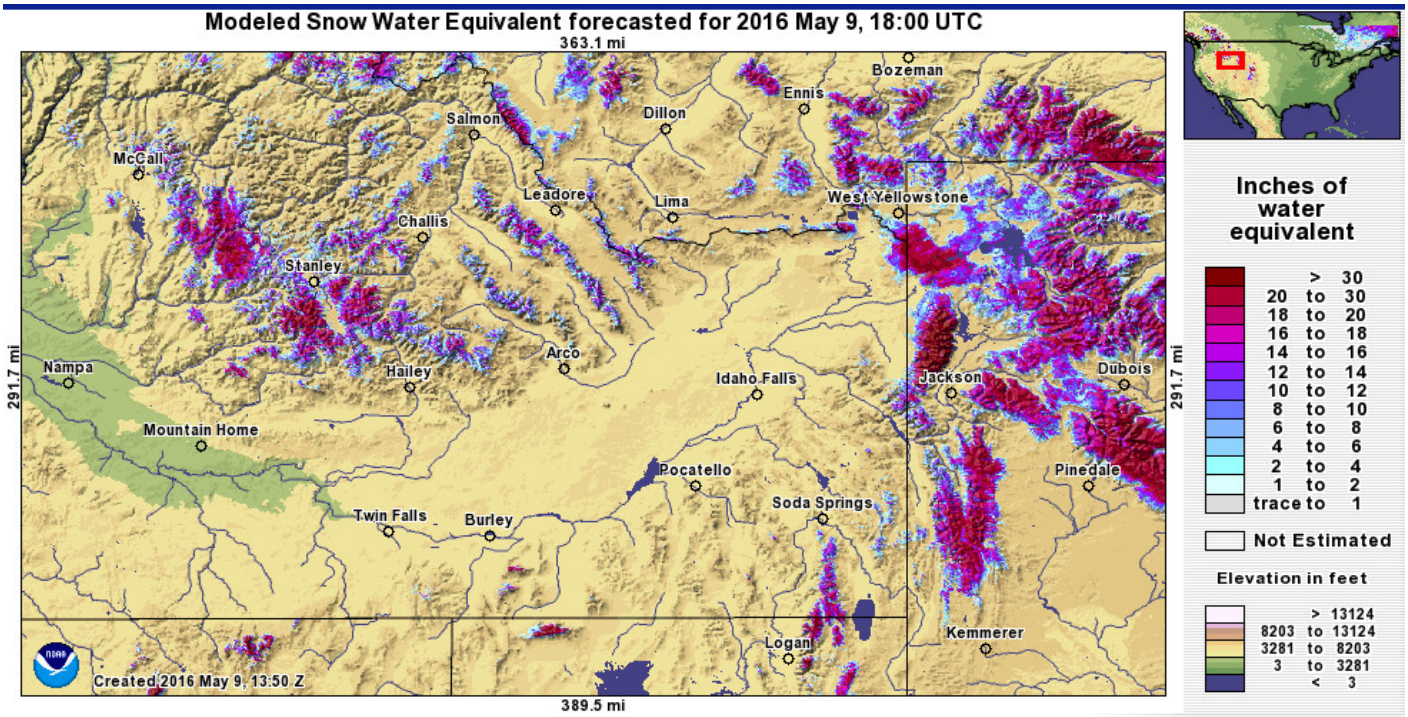


wrcc.dri.edu/snotelanom/basinswe.html

Current SWE Conditions: % of Avg (5/9/16) (SNOTEL): (NWRFC)



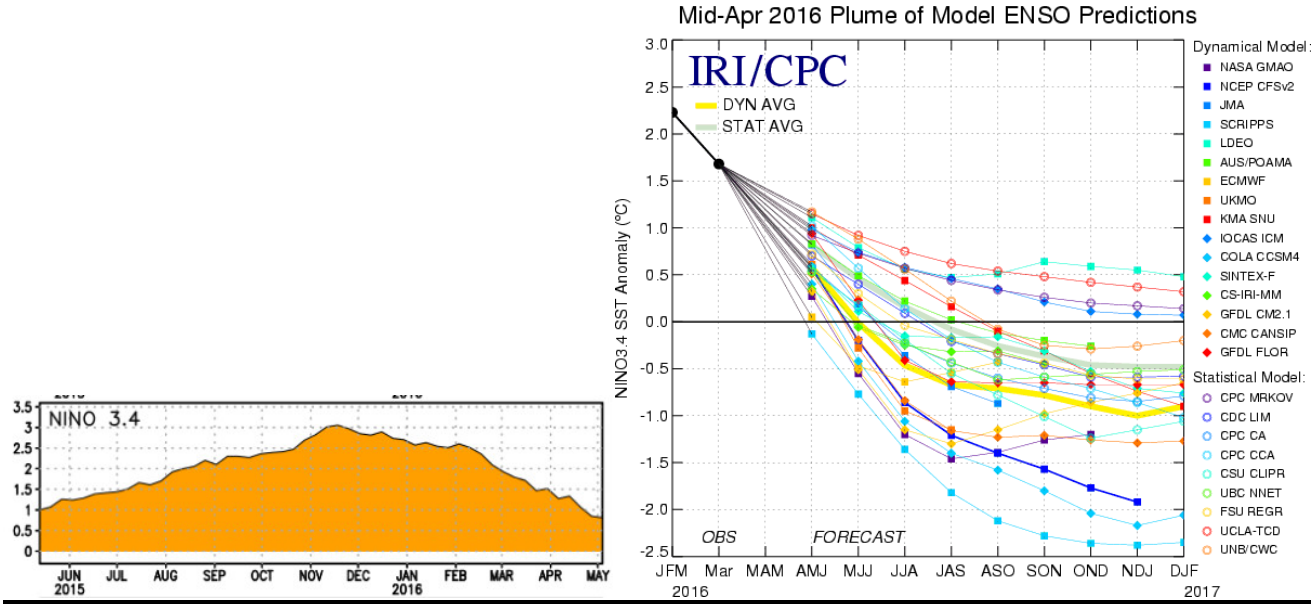
nwrfc.noaa.gov/snow



nohrsc.noaa.gov/interactive/html/map.html

ENSO Update:

Latest Observed SST Departure: Niño 3.4 ~ 0.8 Deg C



cpc.ncep.noaa.gov, iri.columbia.edu/climate/ENSO *and* cpc.ncep.noaa.gov/products/analysis_monitoring/enso_advisory/ensodisc.pdf

CPC Synopsis: El Niño is present and is weakening, expected to transition to ENSO-neutral spring/early summer 2016 with an increasing chance for La Niña conditions developing in the second half of the year.

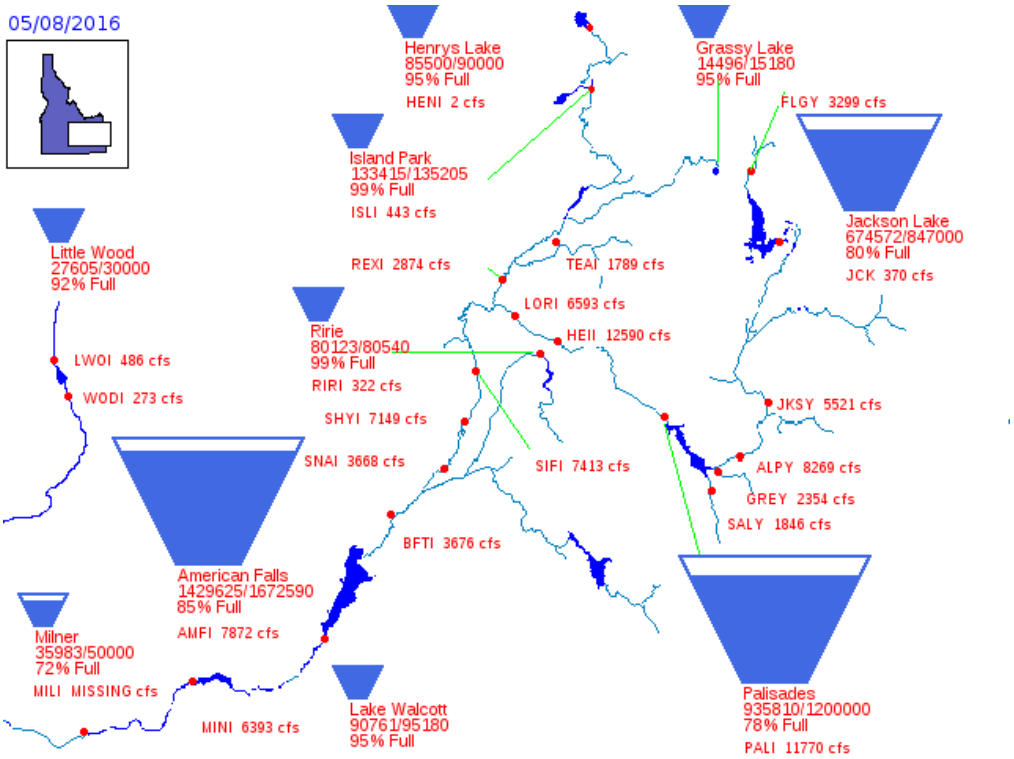
Note: Positive equatorial sea surface temperature (SSTs) anomalies continue across most of the Pacific Ocean. MJO has been weak recently. The Pacific Decadal Oscillation (PDO) is currently positive.

Reservoirs:

Reservoir	% Capacity March 31[1]	% Capacity April 30[2]	Percent Change	% of Average[2]	% of Average Last Year[2]
Jackson Lake	67	74	7	141	159
Palisades	70	82	12	126	131
Henrys Lake	89	93	4	101	106
Island Park	89	97	8	106	109
Grassy Lake	89	93	4	110	108
Ririe	65	100	35	137	97
Blackfoot	58	72	14	115	90
American Falls	82	87	5	96	89
Mackay	77	90	13	122	113
Little Wood	74	89	15	107	84
Magic	47	83	36	124	64
Oakley	30	36	6	79	65
Bear Lake	41	43	2	85	92
Lake Walcott	94[3]	95[4]	1	n/a	n/a
Milner	68[3]	72[4]	4	n/a	n/a

Source: (1) NRCS March 31, 2016; (2) NRCS April 30, 2016.
(3) US Bureau of Reclamation (BOR) April 11, 2016 (4) BOR May 8, 2016

wcc.nrcs.usda.gov/ftpref/support/water/SummaryReports/ID/BRes_5_2016.pdf

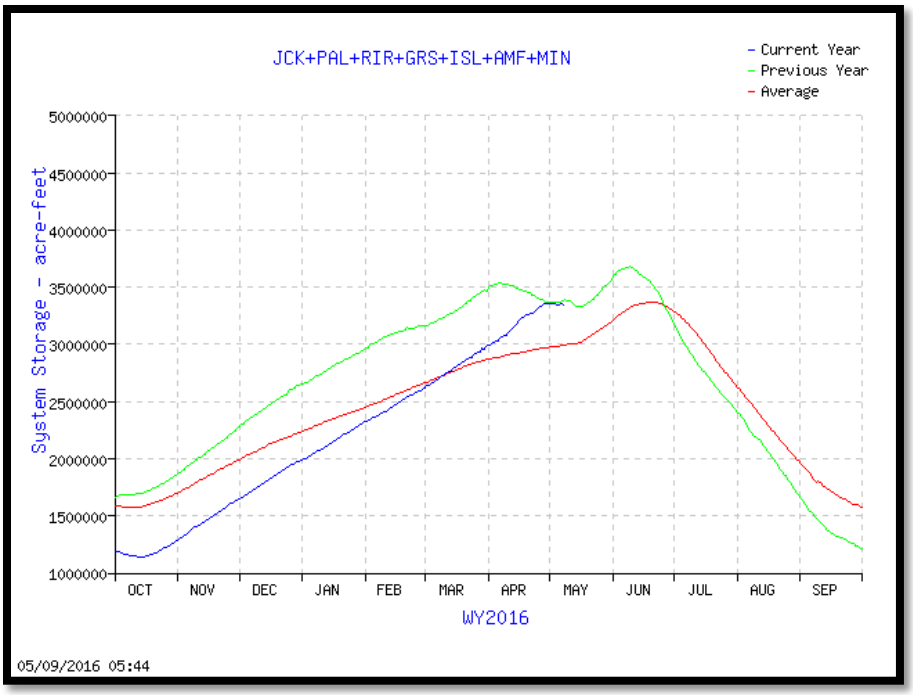


83% of Capacity in Upper Snake River System
(Jackson Lake, Palisades, Grassy Lake, Island Park, Ririe, American Falls & Lake Walcott)

usbr.gov/pn/hydromet/burtea.html

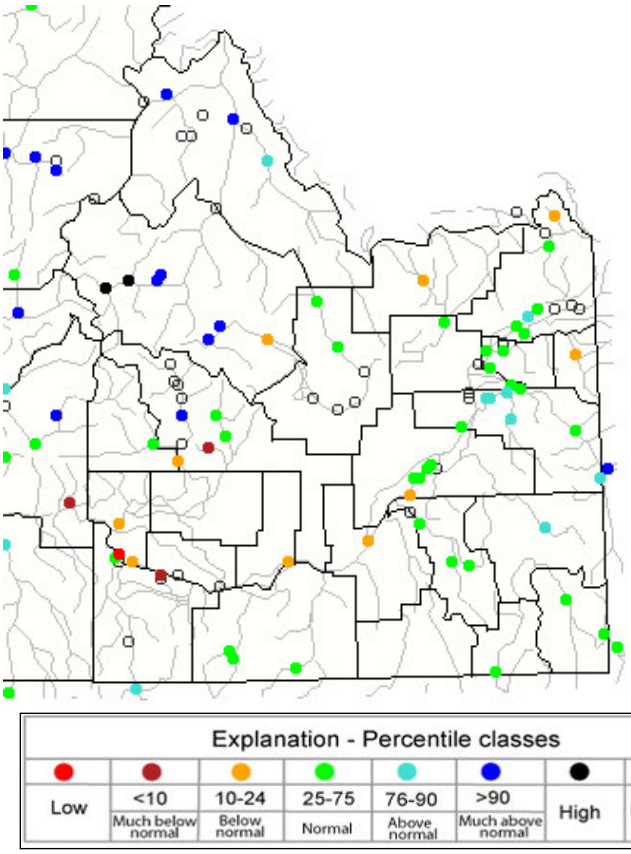
Upper Snake River:
Total Space Available: 686,893 AF
Total Storage Capacity: 4,045,695 AF

Graph of Upper Snake River Current Total System Reservoir Storage



usbr.gov/pn-bin/graphwy2.pl?snasys_af

Streamflow:



Monthly average streamflow compared to historical average streamflow for April 2016.

USGS

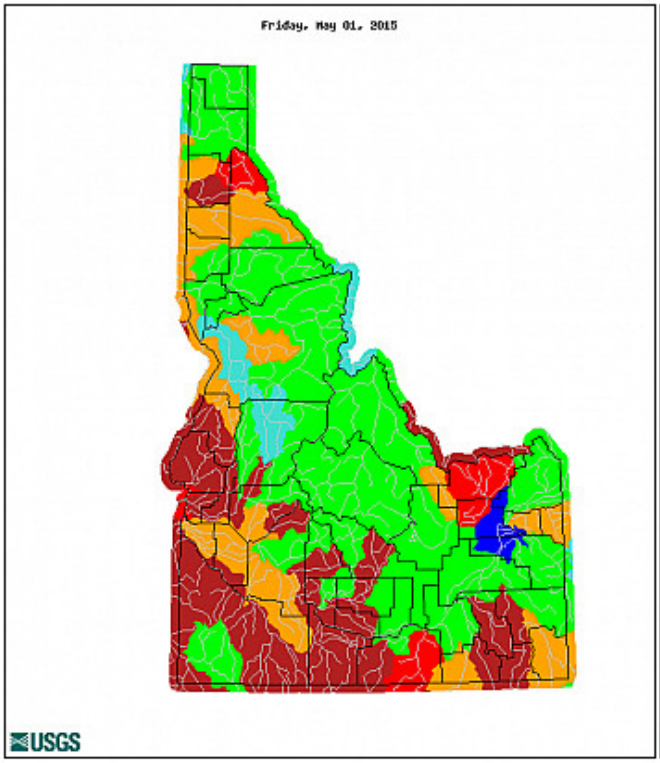
waterwatch.usgs.gov/?m=mv01d&r=id&w=map

Comparison of Streamflow Maps

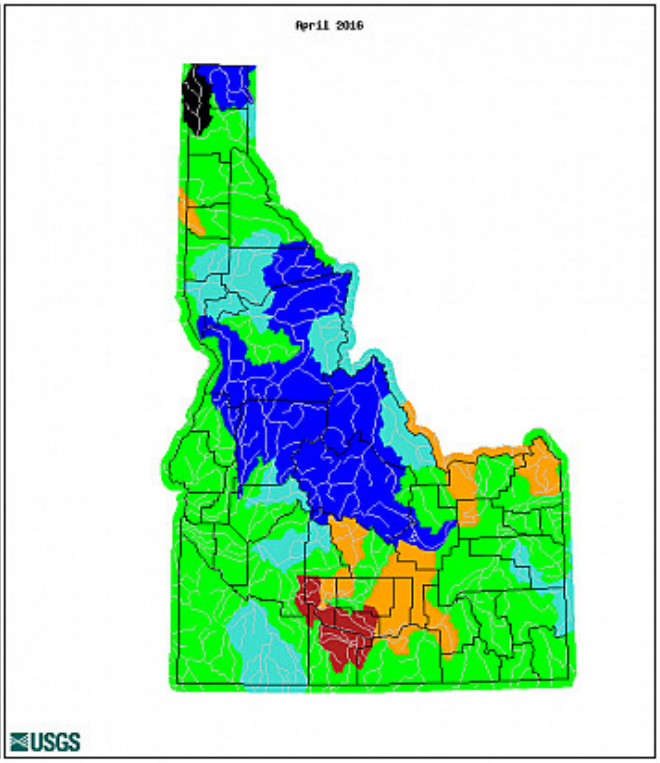
Geographic area: Idaho | Water resource region: | GO

Map type: Monthly Streamflow (month of year) | Sub type: HUC Streamflow Map

Date (YYYYMM): 201504



Date (YYYYMM): 201604

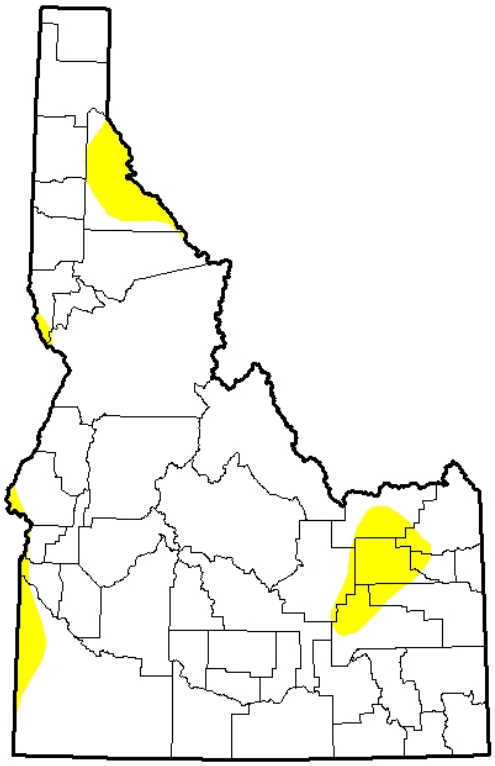


Explanation - Percentile classes							
Low	<10	10-24	25-75	76-90	>90	High	No Data
	Much below normal	Below normal	Normal	Above normal	Much above normal		

waterwatch.usgs.gov/index.php

Drought:

U.S. Drought Monitor
Idaho



May 10, 2016

(Released Thursday, May. 12, 2016)

Valid 8 a.m. EDT

Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	92.41	7.59	0.00	0.00	0.00	0.00
Last Week 5/3/2016	92.08	7.92	0.00	0.00	0.00	0.00
3 Months Ago 2/9/2016	11.19	88.81	52.81	3.90	0.00	0.00
Start of Calendar Year 12/29/2015	10.98	89.02	64.05	24.35	1.18	0.00
Start of Water Year 9/29/2015	0.00	100.00	85.59	47.55	29.26	0.00
One Year Ago 5/12/2015	0.02	99.98	61.33	21.96	8.18	0.00

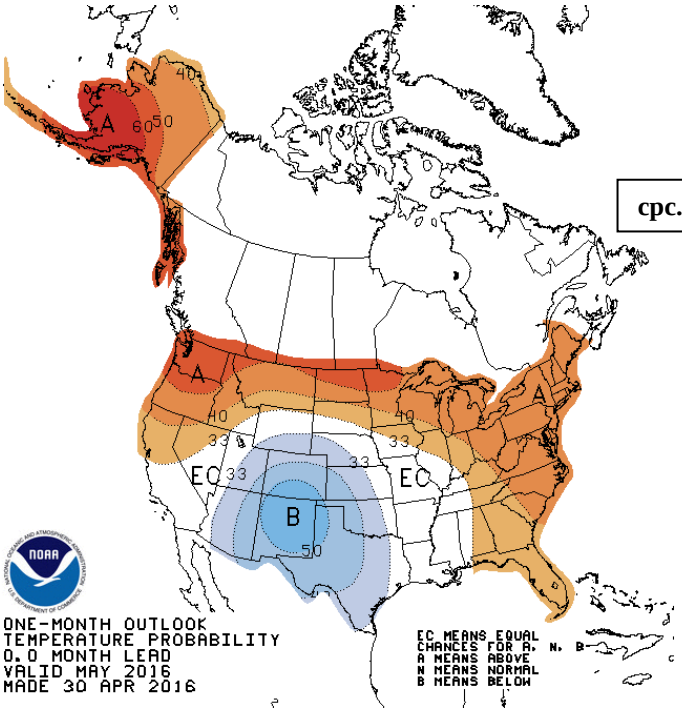
Intensity:

- D0 Abnormally Dry
- D1 Moderate Drought
- D2 Severe Drought
- D3 Extreme Drought
- D4 Exceptional Drought

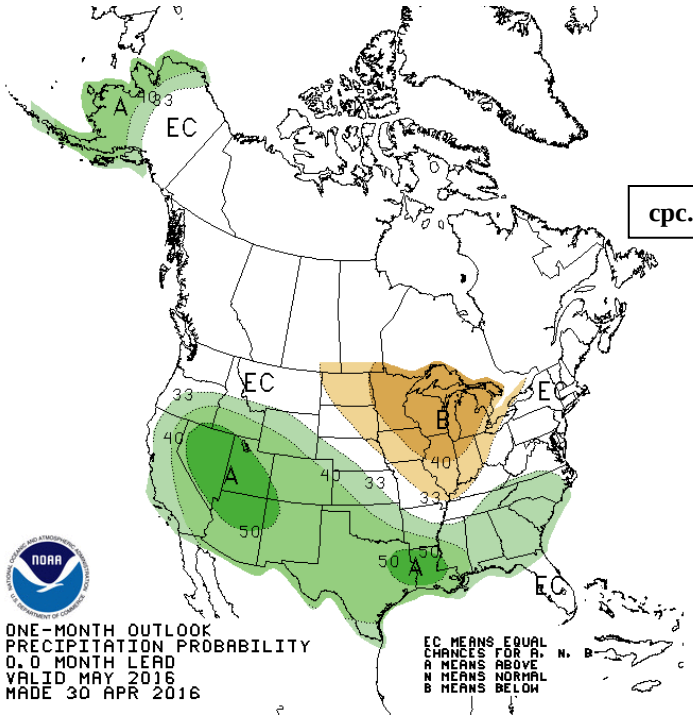
The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. See accompanying text summary for forecast statements.

Author:
Brian Fuchs
National Drought Mitigation Center

http://droughtmonitor.unl.edu/



cpc.ncep.noaa.gov/products/predictions/30day/off15_temp.gif



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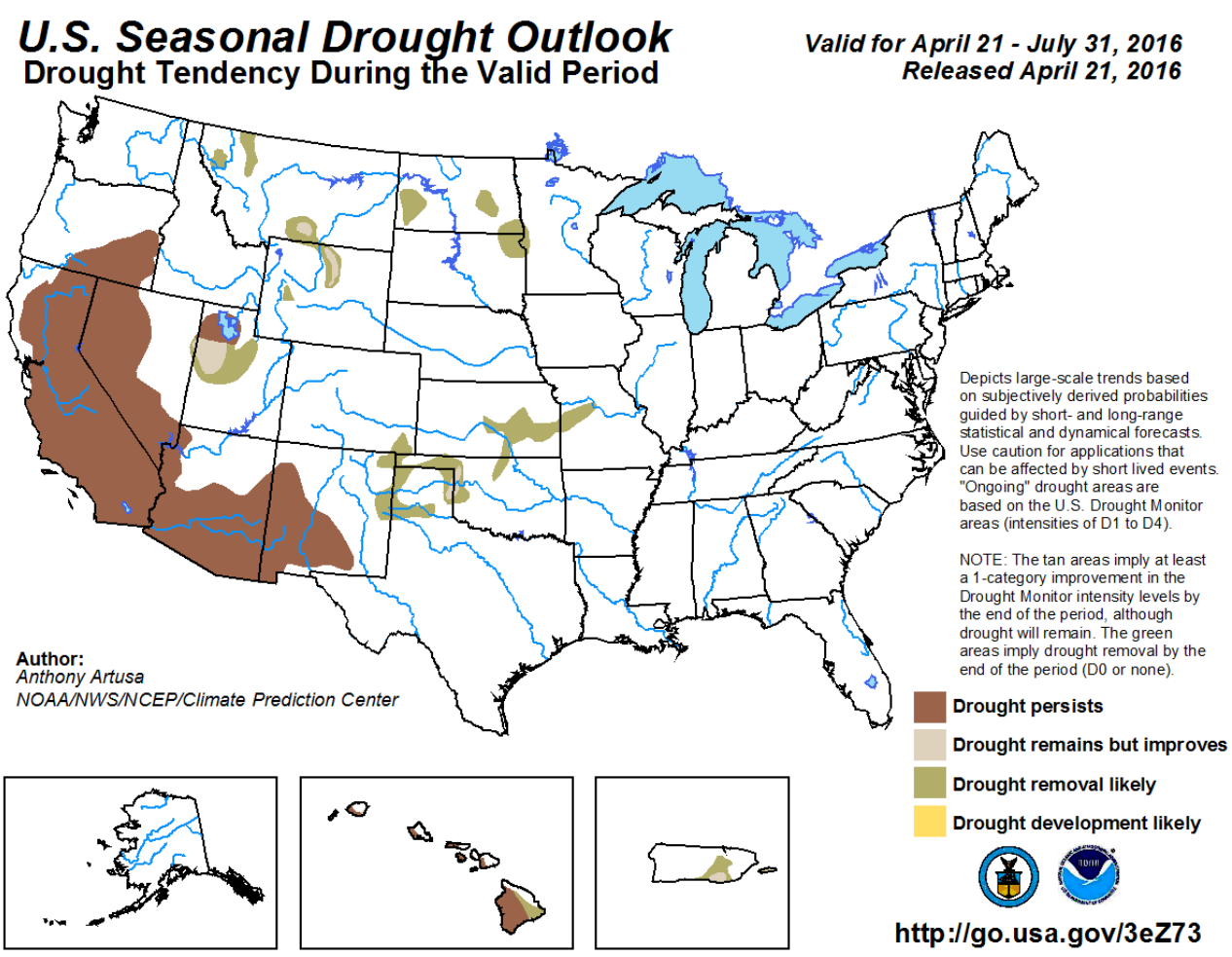
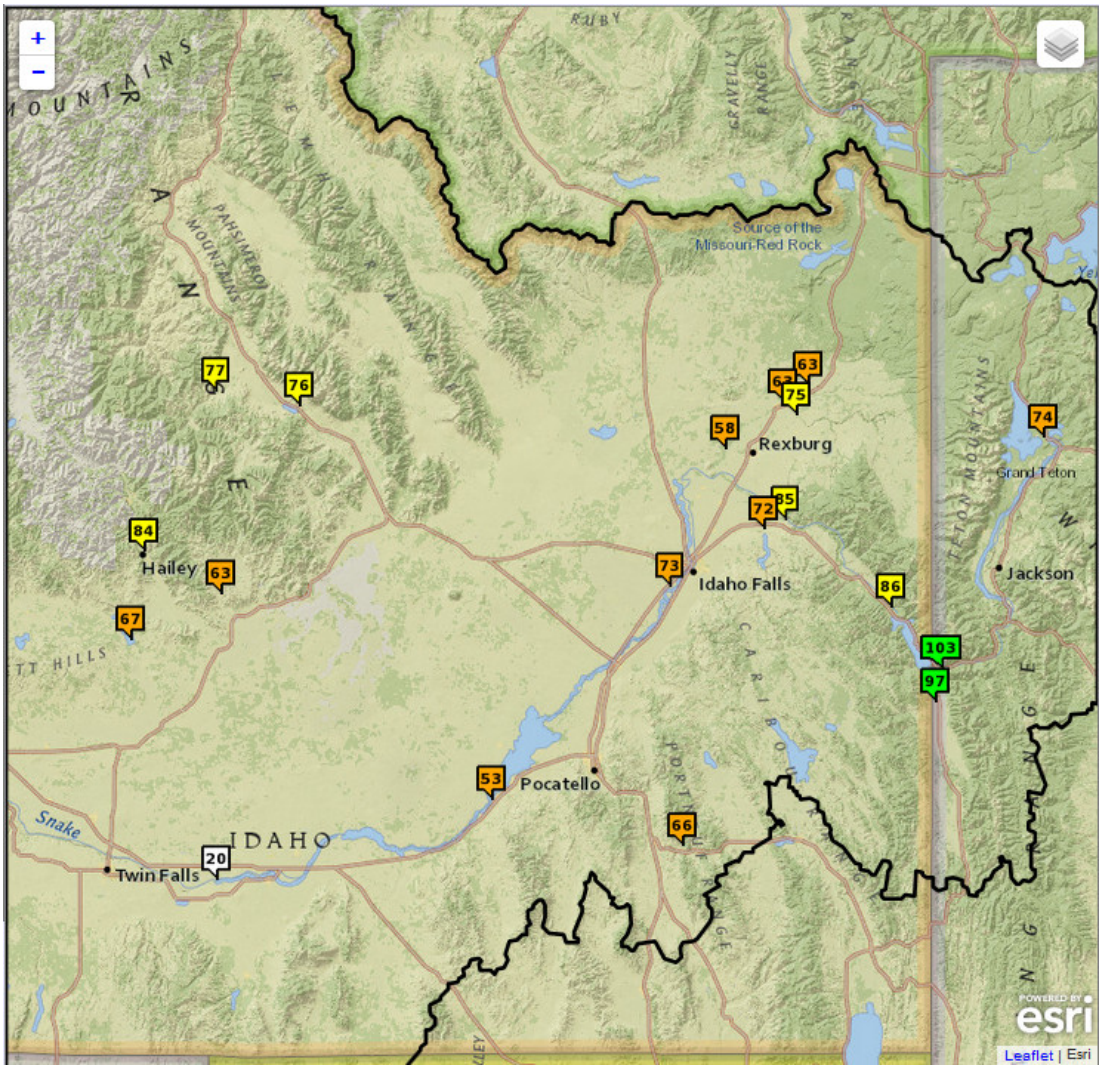


cpc.ncep.noaa.gov/products/expert_assessment/season_drought.png

Water Supply: **NWRFC Water Supply Volume Forecast Map (5/15/16):**



nwrfc.noaa.gov/ws

NWRFC Water Supply Forecasts:

*For the current Forecast Period Table showing the 90% volume, 50% volume, Percent Normal (official forecast) and 10% volume Exceedence Forecast Ensemble Probabilities in conjunction with the current 30-Year Normal (1981 - 2010): (to select the locations within the Weather Forecast Office Pocatello, click on the column header “Servicing WFO” to sort to PIH)

www.nwrfc.noaa.gov/water_supply/ws_summary.cgi

*For a table format of the current Volume Forecasts and current Runoff statistics for various forecast periods for locations within the Weather Forecast Office Pocatello: (select type: WFO and Site: Pocatello)

www.nwrfc.noaa.gov/water_supply/ws_report.cgi

CBRFC Water Supply Forecast Report for Bear River basin (May 1 Forecast):

Water Supply Volume Percent Average/Median Condition
▲ <70 △ 70-90 ▲ 90-110 △ 110-130 ▲ >130 △ Regulated

Options (on/off): Plot
Area: CBRFC Green Colorado San Juan Great Sevier Virgin Low Col WGRFC ABRFC

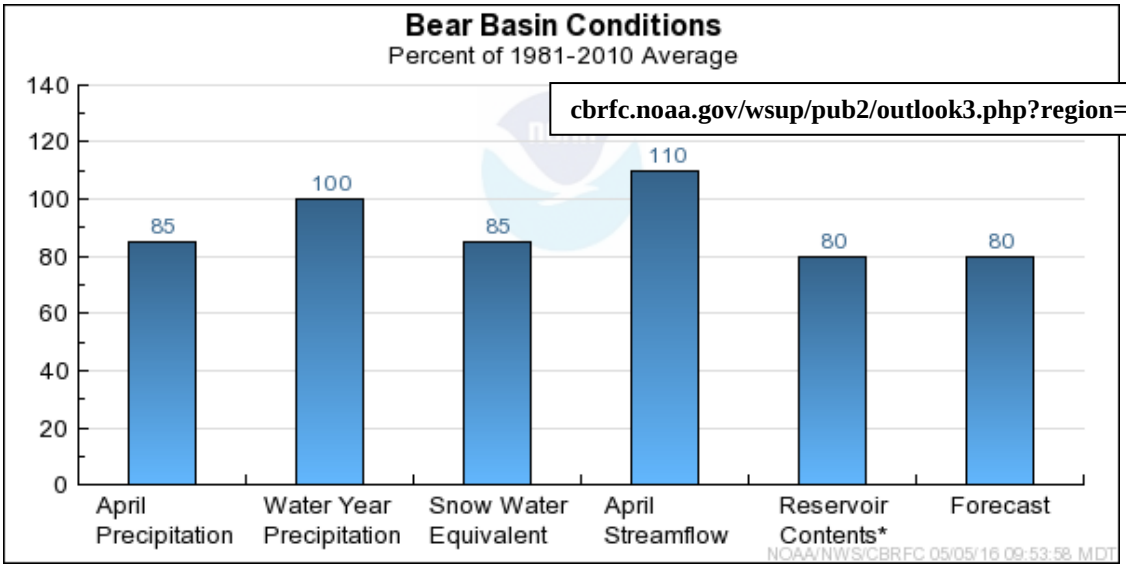
Columns (on/off): Area Sub Area NWS ID DS River Location Forecast Date Avg Cond Med Cond Forecast Period Min 90 P 70 MP 50 P 30 Max 10 Avg M Med

Click column heading to sort by that data. Click ID to view point info. Click Area, Sub Area, or Forecast Period to show only those points.

	Area	Sub Area	NWS ID	River	Location	Forecast Date	Avg Cond	Med Cond	Forecast Period	Min 90	P 70	MP 50	P 30	Max 10	Avg	Med	Pct Avg	Pct Med
1	Great	Bear	BERU1	Bear	Utah	2016-5-1	△	△	Apr 01-Jul 31	80	88	**93**	97	108	112	106	*83*	*88*
2	Great	Bear	BERU1	Bear	Utah	2016-5-1	△	△	May 01-Jul 31	73	81	**86**	90	101	104	100	*83*	*86*
3	Great	Bear	BEAW4	Bear	Woodruff Narrows Rsvr	2016-5-1	▲	▲	Apr 01-Jul 31	63	69	**76**	81	91	121	110	*63*	*69*
4	Great	Bear	BEAW4	Bear	Woodruff Narrows Rsvr	2016-5-1	▲	△	May 01-Jul 31	53	59	**66**	71	81	105	87	*63*	*76*
5	Great	Bear	BORW4	Smiths Fork	Border	2016-5-1	△	△	Apr 01-Jul 31	62	66	**69**	73	77	89	80	*78*	*86*
6	Great	Bear	BORW4	Smiths Fork	Border	2016-5-1	△	△	May 01-Jul 31	51	55	**58**	62	66	80	67	*72*	*87*
7	Great	Bear	STDI1	Bear	Montpelier	2016-5-1	△	△	Apr 01-Jul 31	69	78	**82**	92	107	182	117	*45*	*70*
8	Great	Bear	STDI1	Bear	Montpelier	2016-5-1	△	△	May 01-Jul 31	50	59	**63**	73	88	145	104	*43*	*61*
9	Great	Bear	LGNU1	Logan	Logan	2016-5-1	△	▲	Apr 01-Jul 31	88	92	**94**	99	105	111	97	*85*	*97*
10	Great	Bear	LGNU1	Logan	Logan	2016-5-1	△	▲	May 01-Jul 31	71	75	**77**	82	88	96	82	*80*	*94*

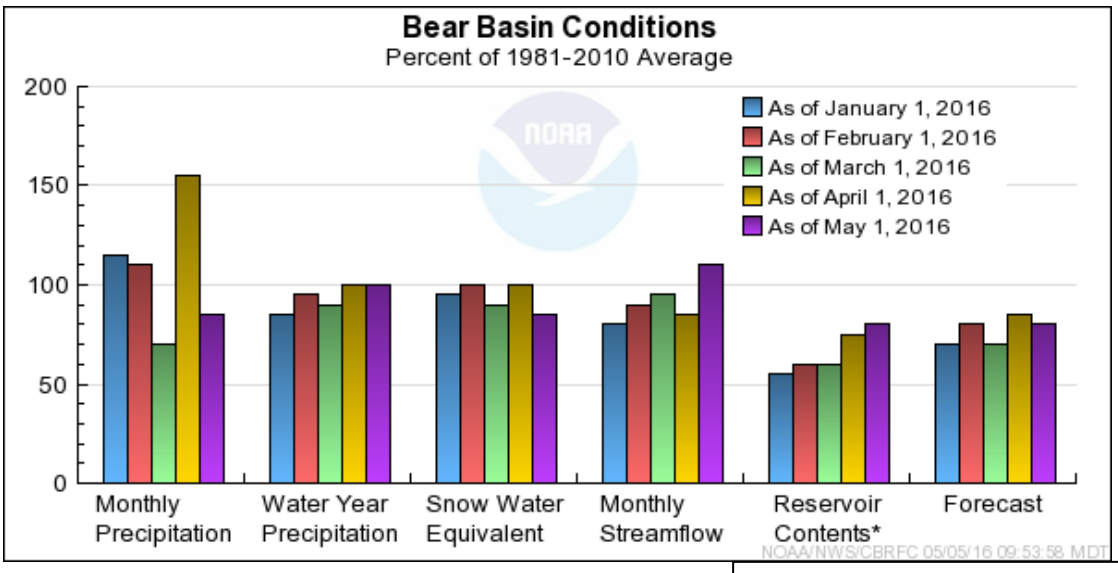
cbrfc.noaa.gov/rmap/wsup/wsuplist.php

Bear River Basin Conditions:



cbrfc.noaa.gov/wsup/pub2/outlook3.php?region=sl&month=5&year=2016#br

Snow Water Equivalent in Percent of Median.
* Percent usable capacity, not percent average contents.



cbrfc.noaa.gov/wsup/pub2/graph/png/br.cond.2016.4.png

NRCS-NWCC Water Supply Forecast Report for the upper Snake River and Bear River basins (May 1 Forecast):

*For a table format of the current Volume and Percent of Average Forecasts for both the upper Snake and Bear River basins which show various forecast periods for the 50% volume, percent of average (Official Forecast), max volume (10%), 30% volume, 70% volume , min volume (90%) and the 30-year 1981 - 2010 average, please visit:

www.wcc.nrcs.usda.gov/wsf/west_fcst.html
and click on appropriate first of month forecast and then either UPPER SNAKE or BEAR

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End

cbl